GRUMMAN plane news

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Clarify F-14 sale to Iran in letter to shareholders

Some recent press stories concerning Grumman's sale of F-14 Tomcats to Iran were laden with misinformation, bad guesses, and apparent falsehoods. To clarify the record, Chairman Jack Bierwirth and President Joe Gavin of Grumman Corporation sent the following letter to the shareholders:

A number of newspaper articles have appeared in recent weeks concerning Grumman's retention of commissioned sales representatives in connection with the sale of F-14 Tomcats to the Imperial Iranian Air Force. Certain articles have charged Grumman management with improper conduct. Much of this publicity has been so erroneous or misleading that we believe it would be useful to inform our shareholders what has in fact occurred as well as to provide a proper perspective on the use of commissioned sales representatives on international marketing efforts.

First, we would like to make the following points absolutely clear:

1. The Iranian F-14's are being procured under a contract between Grumman and the U.S. Government which parallels in precise detail the provisions of the contract under which F-14's are being procured for the U.S. Navy. No action taken in connection with either of these contracts violates any provision of U.S. law or procurement regulations, and no costs for commissions have been charged to either procurement. A recent audit of our records by an agency of the United States Government has verified this fact.

2. In Iran, as in a number of other countries, Grumman has engaged the services of sales representatives on a commission basis. In each case, these services are retained under a written contractual agreement with the representative defining the nature of the services, duration of the engagement and terms of payment. These agreements do not involve secret activities by our representatives nor do they serve as cover for bribes or kickbacks to officials of the countries involved. We have obtained specific written statements from our sales representatives that neither the services performed nor the commissions paid violated in any way the laws, rules and regulations of the Government of Iran.

'Common sense'

To most American companies seeking to sell their products overseas, the use of commissioned sales representatives in the country involved is a matter of good practical common sense. In most cases the American company does not have the necessary detailed knowledge of the language, customs and market conditions within the foreign country to launch a successful sales effort of its products. To open a permanent branch office staffed by both U.S. and foreign nationals in each country where potential markets for the company's products exist would be prohibitively expensive. Once markets have been successfully established within a country, a branch office may make some sense. However, in the early stages of a marketing effort most U.S. companies believe it preferable to employ established local selling agencies on a commissioned basis to sell their products. If the marketing effort fails, there is little or no expense to the company. If the effort succeeds, the sales representatives' commissions are paid from our earnings. Such arrangements in international sales activities are as normal as the use of a real estate broker in the sale of a residence in the United States.

Grumman has retained the services of commissioned sales representatives in a number of countries throughout the world. In each case

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They made it go. Crew for the early vehicle flight tests of the EF-111A grouped with Systems Program Office director Col. J.L. (Larry) McKenna are: (L to R) Gary Sennes, crew chief; Art Dittmar, air frame technician; Chuck Sewell, chief test pilot; Col. McKenna; Roland Rogers, ordinance technician; Gary Bates, electrical technician; and Wayne Duffy, hydraulic technician. Not present are project test pilot Don Evans, and Doug Herd, weapons system operator.

EF-111A tests successful

The EF-111A early vehicle flight test program ended successfully on January 9 with the 21st flight. Don Evans, EF-111A project pilot, and Chuck Sewell, chief test pilot, shared the controls during a total of 33 flight hours for the series of tests that began December 15. Doug Herd, the weapons system operator, was in the right seat for the tests.

The program to convert two F-111A aircraft to the EF-111A electronic warfare capability was begun a little more than a year ago when the Air Force announced the award to Grumman Aerospace of an approximately $85 million contract. Much of the specialized jamming equipment to be integrated into the EF-111A is already operational in the EA-6B Electronic Countermeasure aircraft. Experience in developing the EA-6B has been considered as a prime reason for Grumman Aerospace gaining the contract.

Early flight tests, conducted with and without the weapons-bay radome installed, were made to evaluate the effect of the 16-foot-long radome on aerodynamic and engine inlet performance. The radome protrusion on the bottom of the EF-111A fuselage houses the antennae for the high-powered radar jamming transmitters. No aerodynamic or engine performance problems resulted from the testing and the performance was judged very satisfactory, says Tom Street, EF-111A program director.

Grumman will modify the F-111A aircraft to accommodate internal installation of several tons of electronic jamming equipment. When the modification is completed, it will include transmitters in the weapons bay, receiving equipment and antennas in a fin-fairing structure on the aircraft's vertical fin, jamming and receiving antennas, specially

(Continued on page 3)

Conduct alcoholism seminars, part of company-wide program

There are approximately four-and-a-half million alcoholic workers in the United States. These people who suffer from one of mankind's most insidious diseases cost industry at least $15 billion annually in absenteeism, sick leave, wasted time and materials, and accidents.

Considering those statistics supplied by the National Council on Alcoholism, it should be understandable that when an employee's job becomes affected by alcoholism, the great majority of companies believe they have the right and obligation to get involved. In the past, alcoholism has been approached on an individual case basis; but in September, Grumman initiated a company-wide alcoholism program.

"We realized when formulating the program," says Tom Conley, Personnel Relations representative, "that the alcoholic's immediate supervisor was the key to the program's success because he or she is in the best position to know the extent of absenteeism, personality problems, and deteriorating job performance that usually accompany the excessive use of alcohol. For this reason, we established an alcoholism educational seminar for Grumman supervisors. By June, over 2,000 supervisory personnel will have attended."

Every Wednesday evening since September, Peter Sweisgood, associate director of the Long Island Council on Alcoholism (LICA) has been addressing 30 to 40 supervisors in the Plant 28 auditorium.

Judging from the attendees' comments at the last seminar, Sweisgood is very effective in delivering the facts about the drug, alcohol, and the disease of alcoholism. "I've attended several seminars as a supervisor," says a 35-year Grumman veteran, "but I have never been so spell-bound or heard a more refreshing and informative approach on any subject." Adds another attendee, "It's natural for a supervisor to be 'protective' and 'cover up' a worker's problem with alcohol. Now, I find that's the worst action you can take—the alcoholic can and should be helped before he kills himself."

The first half of Sweisgood's talk deals with the effect alcohol as a drug has on the mind and body of every person. For many attendees, the myths and misconceptions about alcohol are quickly dispersed. Says one, "I never knew that a can of beer has the same amount of alcohol as a glass of wine or a shot of whiskey."

While Sweisgood keeps his audience attentive with anecdotes about his former days as an active alcoholic, he also doesn't pull any punches when relaying the hard-core effects the disease has on the afflicted individual—and the alcoholic's family.

During the evening, Sweisgood asks if anyone knows an alcoholic. At most seminars, all the attendees nod their heads affirmatively. In the second segment, Sweisgood describes the disease of alcoholism as it creeps up on its victim and grows more and more virulent year by year. "He was right. He described it almost to the 'T' as it happened to my friend," recalls one attendee.

Sweisgood concludes his talk by saying: "Alcoholism can be arrested—a person can become rehabilitated."

"Grumman acknowledges that fact," says Conley. The program assures that an employee suffering from alcoholism will receive the same consideration and opportunity for treatment presently extended to employees with other illnesses; and it encourages people who have the disease to seek diagnosis, and, when indicated, to follow through with prescribed treatment.

"Our aim is to retain valuable employees," says Conley, "by motivating the alcoholic to seek treatment, and to assist him or her in returning to full health and productivity."

According to a survey of the first 30 persons currently participating in the program, the average age is 45 years old (ranging from 19 years to 63 years of age); and the average length of service is 13 years (ranging from six months to 37 years).

The main objective of the alcoholism seminars is to educate Grumman supervisory personnel—not to certify them as professional diagnosticians, says Conley. Assistance is readily available for the supervisor and the alcoholic from several in-house and outside facilities.

Alcoholism seminar. Peter Sweisgood of the Long Island Council on Alcoholism addresses a group of supervisory personnel at a recent educational seminar in Plant 28. (Photo by Jim Wagner)

In-house facilities that assist alcoholics are the Medical Department, Ext. 2101; or Personnel Relations, Ext. 3521. There are also Alcoholics Anonymous meetings held every Monday at 5 p.m. in Plant 39, classroom 1.

Through Personnel Relations, a Grummanite can get in contact with the "We Care" committee, a group of concerned recovered alcoholics working at Grumman. It was this group that approached Tom Rozzi, Vice President—Security and Personnel, about establishing a company-wide alcoholism program last April.

Facilities outside Grumman that offer assistance are: Long Island Council on Alcoholism (747-2606); Alcoholics Anonymous — Suffolk County (654-1124), and in Nassau County (627-6050).

obituaries

JOHN H. JACOBSON of Kennedy Space Center Test Support, Plant 86, died January 3 at the age of 41. He had been with the company since 1966 and lived at 305 Harbor Drive, Cape Canaveral, Florida.

PHILIP SELIGMAN of Transportation-Operations, Plant 20, died January 8 at the age of 63. He had been with Grumman since 1951 and lived at 32 Hemlock Drive, West Farmingdale.

DONALD K. SCHULZ of Maintenance-Facilities Equipment and Gen., Plant 25, died January 13 at the age of 49. He had been with the company since 1972 and lived at 15-28 St. Louis Avenue, Bay Shore.

Personal

Roy Center, who retired after more than 19 years with Grumman, has been ill and is recuperating in Florida. He would like very much to hear from friends. His address is: 1200 West 79th St., Hialeah, Fla. 33014.

Offering weekend excursion to Pocono Mountains in March

Here's a perfect chance to get away from it all. The Grumman Athletic Association (GAA) is offering a weekend excursion to Woodloch Pines in the Pocono Mountains on March 26, 27, 28.

Excitement and sociability, or serenity and seclusion are yours at this picturesque lakeside hideaway nestled high in the lake region of the Poconos.

Depending upon the accommodations you request, price for the tour ranges from $93 to $101 per person, double occupancy.

The total package includes:

- transportation by deluxe coach (with lavatory)
- two nights accommodations at Woodloch Pines
- breakfast, lunch, and dinner on Saturday and Sunday
- all tips, including guide and driver
- tour of Memorytown, Mt. Pocono
- live entertainment nightly

This trip is being offered to all Grumman employees, retirees, relatives, and friends. Reservations may be made in person at the GAA office in Plant 30, or by mailing a check to Grumman Athletic Association, Plant 30, Bethpage, N.Y. 11714. Reservations will be accepted on a first-come, first-served basis

GRUMMAN plane news

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Clarify F-14 sale to Iran in letter to shareholders

there is a written contractual agreement describing the nature of the service to be performed and the terms of payment if success is achieved. In each case the sales representative is a firm or person with an established record of successful marketing in the particular country involved. In Japan, for example, the trading companies with which Grumman has sales representation agreements are among the largest and most reputable firms in the world. To repeat, none of these agreements involve secret activities by the representatives nor do they serve as cover for bribes or kickbacks to officials of the governments of the countries involved. They are normal and regular commercial agreements.

In some cases the dollar payments to the representatives can be quite large because the sales volume from the sale of a major aircraft program is large. However, as a percentage of sales, the commissions in such cases are usually quite low, much lower than would be the case for the real estate broker in the U.S.

Survey of practices

When Grumman became aware of a potential market for the F-14 Tomcat in Iran in 1972, we believed it necessary, based on a survey made of customary practices in Iran, to employ a full-time in-country representative to assist us in completing the sale.

Accordingly, we retained a sales representative on a commission basis in February of 1973. It was our intention to include the cost of this effort in our proposal for these aircraft, a practice clearly allowed at that time by the U.S. Government's regulations concerning overseas sales.

Approximately nine months after we entered into our agreement, the regulations changed and we were no longer able to increase the cost of our proposal to include commissions. Again, we reviewed our situation to determine whether an in-country representative was necessary. Since all advice we could obtain indicated that a representative was still necessary in this highly competitive (and to us still unfamiliar) situation, we elected to continue our agreement with our representatives. We did so thereafter as an investment of Grumman funds, only. There would be no cost whatsoever to the Government of Iran or to U.S. taxpayers. To us, a marketing effort which resulted in such a significant and substantial increase in international business certainly was worth such an investment. The amount of the commissions involved would have approximated 2 percent of the anticipated value of the contract to Grumman.

Subsequently, as we became better acquainted in Iran, we found strong feelings at very senior levels in the Government of Iran which indicated that, not only were sales representatives not required to do business with the Government of Iran, but that our association with them may have been counter-productive. Following our discussions with senior officials of the Government of Iran, it became apparent that we should change our situation with respect to employment of a sales representative.

We are actively working to comply with this direction, keeping appropriate officials of both Iranian and U.S. Governments informed.

It is extremely unfortunate that certain press reports, which were inaccurate and seemingly irresponsible, have conveyed to the public a totally erroneous impression of these sales representative agreements. We would like to assure you, however, that this controversy in the press has not hampered our efforts to carry out our commitments to supply aircraft and support services to the Government of Iran. The first two F-14's scheduled for overseas delivery were flown and accepted by the U.S. Navy in December and will be delivered on time. Training devices, spare parts, and support equipment have been delivered, and over 160 Grumman employees are in Isfahan to support the aircraft after arrival.

We are confident that this program can be carried out in a manner satisfactory to the governments concerned. Grumman has long had a reputation for quality and integrity. We have operated in accordance with this tradition and we will continue to do so—as we firmly believe you expect us to do.

Discount Tickets

The world famous Soviet Circus is coming to the Nassau Coliseum for five days in February and discount tickets are on sale at Employees Services Offices. For sections 206 and 207 the tab is $5.50 (regularly $7.50) and section 307 is $4.50 ($6.50). Best known for its trained bears that do everything but talk, the one-ring circus will perform on February 4th at 7:30 p.m.; 5th at 8:00 p.m.; 6th at 8:00 p.m.; 7th (Sat.) at 2:30 p.m.; and Feb. 8th at 6:00 p.m. Checks or money orders are to be made out to the Nassau Coliseum.

people

Once again, for Christmas 1975, the Product Support Department received contributions of over $3,000 in its Fund For Needy Families. Donations came to $3,250 which was given to 10 Product Support and 16 other Grumman families who found themselves in unfortunate circumstances during the Christmas Season. In 1974, the drive collected $3,600 and in '73, $3,400.

The Christmas fund was established by the department to assist employees selected from lists compiled and submitted by it and other departments. The Christmas Fund committee carefully selects the neediest recipients from the final combined list.

The 1976 Christmas Fund Drive already has a boost. Contributions made after the collection were deposited in the Fund's Credit Union account for distribution next December.

Musicians needed

Musicians are needed for the North Shore Community Concert Band, says George Yenetchi, an active participant in the concert group. The band meets for rehearsal every Tuesday at 8 p.m. in the Manhasset High School. For further information, call George on Ext. 2433 or 938-2311.

Before the party. Santa Claus (Dick Erdody) stopped off at Plant 30 on December 23 to pick up Bob Bailey (L), director of Supply Operations, and deputy director Lou Geneve and other staff members along with the many presents donated for a Christmas party at the St. Christopher's Home in Sea Cliff. (Photo by Jim Wagner)

EF-111A test program

(Continued from page 1)

designed computers, displays, and control equipment.

Last May, Grumman Aerospace achieved a U.S. Department of Defense "first" when a demonstration of the EF-111A Performance Measurement System was made before a tri-services evaluation team. EF-111A program director Col. J. L. McKenna said, "Never before has a contractor submitted itself for a management system demonstration just 90 days after contract award and passed on the first try." As a result, the new approved performance management system became established. All future Grumman Aerospace research and development contracts with the Department of Defense will follow the performance measurement system that is applied to the EF-111A program and the need for further detailed demonstrations beyond it will be eliminated.

Designed as a high-performance replacement for the Air Force's EB-66 aircraft, the EF-111A will be used by the Tactical Air Command to provide tactical jamming support as protection for strike forces operating over heavily fortified radar-controlled defensive positions.

service milestones

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Billy H. Penix, Elect. Installation (6)
David C. Murray, Prod. Deputy & Statn. Foreman (6)
William T. Cummings, Prod. Rel. & Analy. (6)
Claus L. VonGlahn, Elect. Support (6)
Denovan D. Jones, Flt. Acceptance (7)
Anthony Podejko, Flt. Avionics (8)
Harry J. Karaus, Receiving Insp—Gen. (17)
Charles H. Rhatigan, Plant Protection (18)
Eileen Toomey, Trans. Office (20)
Cecil Felton, Trans-Ops. (20)
Joseph W. Drauch, Research (26)
John M. McNamara, Dir. of Facil. Maint. (30)
Frederick J. Piwowar, Maint-Facl. Equipt. & Gen. (30)
John A. Wood, Maint-Facl. Equipt. & Gen. (35)
Richard H. Imgram, Des. Engg.—Mgmt. & Stf. (35)
Louis J. Salvatorelli, Structural Analy. (36)
Renard S. Pearson, Environ. Cntl. Des. (40)
William C. Eissler, EP Circ. & Mod. Fab. (43)
Gordon A. Mitcher, Methods Engg.—GSE (43)
Henry J. Nalenc, Elect. Wire Prep. (44)
John C. Schultz, Cets Training (60)
Joseph P. Lennon, Base Supply Office (60)
Walter R. Schmersal, A/C Sys. Serv. (80)
Edwin M. VonEssen Jr., Engineering (88)
George A. Smith, Supp. Equipt. Serv. (94)

20

Robert Diamond Jr., Prod. Cntl. (7)
Vito Santora, Prototype (1)
Robert F. Kwiatkowski, Sub-Assy. Maj. (1)
Edward W. Lombardi, Hydraulics (1)
Michael A. Marcari, Prod. Mfg-F-14-Producibility (1)
Thomas J. Reidy, Maint-Facl. Equipt. & Gen. (1)
Isabelle E. Ceraso, Prog. Mgmt.—F-14A (1)
Victor C. Ehmig, Config. Data Mgmt. (1)

Joseph Prochaska, Small Pts. Fab (2)
Victor Robinson Jr., Tool Cntl. (2)
Francis J. Savarese, Optical Tool & Metrology (2)
Frederick W. Buck Jr., Conv. Mach. (3)
Edmond C. Rabut, Proj. Admin. (5)
Louis B. Wehle Jr., Engg. Sciences & Tech. (5)
Robert V. Benito, PM Army Prog. (5)
Carl E. Anderson, Structural Des. (25)
Fred G. Smith, Config. Data Mgmt. (25)
Albert A. Hand Sr., Wing Inner Panel & Combo. (36)
Wilbur L. Korrow, Power Plant Des. (36)

A. Adams

N. LaPorta

R. Aliperti

R.L. Metz

W.R. Paul

J.L. Giordano

C.F. Robertson

30

Donald J. Murphy, Final Assy. (1)
John H. Argust, Steel Pts. Assy. (2)
William A. Seward, Assy. Tool Mgmt/Stf. (2)
John W. Burkhardt, Pts. Paint (3)
Vincent Matuza, Wing Final Assy. (3)
Franklin E. Boyce, N/C Mach. (3)
Frederick L. Kunkel, Honeycomb Bonding (3)
Rudolph E. Petter, Prod. Rel. & Analy. (3)
Joseph J. Ridulfo, Flt. Ops. (7)
Nicholas Genega, Electro-Mech. Des. Proced. (15)
Alexander S. Albiston, Prog. Estimat/Pricing (30)
Robert J. Pankratz, Ops. Mfg. Mgmt. & Stf. (43)
Ralph F. Indence, Invent. Mgmt. (44)

L.J. Culmone

B. Kolar

G.W. Hervey

E.A. Ross

A.S. Kertesz

F.P. Tate

A.J. Hauser

W.C. Tappe

R.W. Kress

F.C. Schwab

E.F. Hudson

A. Vanderburght

B.H. Penix

W.T. Cummings

25

Albert Adams, Fluid Power (1)
Nicholas LaPorta, Alodine (2)
Raymond Aliperti, Steel Pts. Assy. (2)
William G. Webster, Propulsion Test (2)
Raymond L. Metz, Dets. & Sub. Fab. Mgmt. (2)
William R. Paul, Prod. Rel. & Analy. (2)
John L. Giordano, Stockrooms (2)
Charles F. Robertson, Maint-Rearrangement (2)
Louis J. Culmone, Insp-Mech. (2)
Bernard Kolar, Conv. Mach. (3)
George Hervey, Conv. Mach. (3)
Eugene A. Ross, Mach. Ops-Ctl. (3)
Alexander S. Kertesz, Insp-Mech. (3)
Frank P. Tate, Elect. Test (4)
Albert J. Hauser, Insp-Mech. (4)
William C. Tappe, Structural Des. (5)
Robert W. Kress, Asst. Dir. Adv. Concepts (5)
Frank C. Schwab, Instr. Test (6)
Eugene F. Hudson, Maint-Rearrangement (6)
Adrian Vanderburght, Maint-Facl. Equipt. & Gen. (6)
Gerard F. Norton, Maint. Indust. Cntl. (6)
Harry W. Jackson, Plant Protection (6)

D.D. Jones

A. Podejko

H.J. Karaus

C.H. Rhatigan

E. Toomey

C. Felton

J.W. Drauch

J.M. McNamara

F.J. Piwowar

J.A. Wood

J.C. Schultz

R.H. Imgram

L.J. Salvatorelli

R.S. Pearson

W.C. Elsler

G.A. Mitcher

H.J. Nalenc

J.P. Lennon

W.R. Schmersal

E.M. VonEssen Jr.

G.A. Smith

John Bernal, Drop Hammer (2)
Fred L. Welge, Dets. & Subs. Fab. Mgmt. (2)
George Yerk, Presentation Serv. (2)
Thomas C. Burke, Conv. Mach. (3)
Nils O. Pearson, Conv. Mach. (3)
John Nicastro, Spot Weld (3)
Kai Andersen Jr., Honeycomb Prefit (3)
Donald A. Scheulen, Prod. Plt.—Mgmt. & Stf. (3)
Stanley S. Ramsden, P/S Prog. Mgmt. (4)
Alfred Zacchia, Support Equipt. Prod. (5)
Ronald W. Betts, Office Mgmt. (5)
Albert E. Ure, Estimat/Pricing (5)
Harry T. Dolan Jr., Plant Protection (6)
Frank J. Becker, Elect. Installation (6)
Carl F. Cooke, Prod. Deputy & Statn Foreman (6)
Adolph R. Koltzow, Plant Stores (6)
Frank L. Dunn, Ship & Spares Consolid. (6)
Leonard L. Smith, Proj. Engg. (6)
Harold R. Tilley, Structures (7)
Francis J. Zahra, Structures (7)
David G. Call, Flt. Ops. (7)
Peter Kleckowski, Maint-Facl. Equipt. & Gen. (12)
Robert Galagaran, Metal & Welding Engg. (12)
Stanley J. Zolek, Maint-Facl. Equipt. & Gen. (14)
Henry Kelley Jr., Plant Protection (18)

On guard

Did you know that Grumman has a Fencing Club? It meets every Monday evening from 4:30 to 6 in the Plant 30 cafeteria. According to club president George Kegney, equipment and instruction is available each week. For further information, call Kegney on Ext. 86048—or better yet, stop by the Plant 30 cafeteria.

Attention: students

Application forms and general rules for the Grumman Tuition Reimbursement Program are now available at all Employee Service Offices (ESO) and Field Base Administration offices.

Students are reminded that applications for the Spring semester must be filed with the Tuition Reimbursement Office, Dept. 327, Plant 39, within 30 days of the school's last date of registration.

Matty Bosch, Parts Paint (27)
William V. DeLongis, Seller Surveillance (30)
Raymond J. Warenik, P/S Supply Ops. Proj. Mgmt. (30)
Victor E. Lindgren, P/S Mech. Engg. Mgmt. (35)
Jarvis Leng, Fluid Dynamics (35)
William T. Ross, Resource Mgmt. (35)
Robert K. Barth, QC Quality Engg. (35)
Joseph A. Jeransky, QC Insp. Mgmt. (35)
Joseph J. Gaffney, Center Sec. Final (36)
James M. Edgerton, Hull Assy. (36)
Elliot E. Blond, Training Systems (43)
Howard J. Jepson, Prod. Rel. & Analy. (43)
Peter Rezanka, Avionics Purchasing (44)
Edward R. Stepnoski, P/S Site Mgmt. (57)
Joan Hermges, Repro Serv. (HQ)

15

Louis R. Laviano, Prod. Ctl-Pts. Cntl. (1)
Robert P. Schroeder, Comm. Nav. & IFF (1)
Howard J. Whidden, Small Pts. Fab. (2)
Arthur H. Hoffmann, Ind. Engg. Layout & Equipt. (2)
Anthony J. Simone, N/C Machines (3)
Ronald K. Bies, Radar (4)
Michael Shawiak Jr., Instr. Test (5)
Terry L. Custer, P/S Equipt. Tech. Mgmt. (5)
Gerald Levine, Aero Test (5)
Edward S. Matthews Jr., Gov't. Matl. Cntl. (6)
William F. Nelson, Training & Dev. (6)
Joseph P. Smith, Mfg. Insp. Elect. (6)
Charles S. Osborne, Aircraft Cntl. Engg. (7)
Ralph Viskewich, Flt. Avionics (8)
Paul Dent, Metal & Welding Engg. (12)
Irving Barnowsky, Meas. Stand. Lab. (12)
John P. Kirwan, P/S Equipt. Tech. Mgmt. (15)
John Piccione P/S Digital Engg. (15)
Michael Liccese, P/S Digital Engg. (15)
Anthony M. Ventura, Plant Protection (18)
Irving R. Monthie, P/S Elect. Engg. (25)
Donald C. Voight, Radar (25)
William R. Weaver, Prog. Estimat/Pricing (25)
Robert M. Benning, Prog. Contracts (25)
Virginia A. Petruchik, Insurance (28)
Robert H. Franke, P/S Pubs. Mgmt. (34)
Anthony Pecora, P/S Tech. Writing (34)
William E. Haynes, P/S Tech. Illus. (34)
Robert H. Penner, Power Plant Des. (35)
Gertrude T. Collins, Tech. Directives (35)
Arthur C. Flanigan, A/C Sys. Serv. (35)
Martin L. Morganlander, P/S Training Mgmt. (39)
Michael J. Childs, Mgt. Function (60)
Ray G. Decker, Tech. Ops. (77)
Richard Sperling, Supp. Equipt. Serv. (79)
Joseph Campisi, Support (88)

NYC: a great adventure?

The generally accepted view of New York City as dangerously crime-ridden and run down is not shared universally. The Michelin Guide to New York City, says, "Constantly changing its skyline and even its population, full of contrasts and paradoxes, strong neighborhood loyalties and local patriotism, loneliness in spite of the crowds, toughness and cynicism mingling with sentimentality and softheartedness, essentially American but shaped by immigrants from a hundred lands. These are some of the elements which make up the unique human adventure of New York, whose challenge to the creative imagination is as great as that of life itself."

The 148-page book, produced in English by the French tire manufacturers for American and other English-reading out-of-towners, is now the official visitors guide for the city in the Bicentennial year.

While making note of problems (such as crime) in the area, the guide accentuates the positive and eliminates the negative. Times Square, considered depressing by many New Yorkers, is described in terms of vitality that might even make *them* take another look. "...Jostling good naturedly for the most part, are representatives of all races, countries, states, classes and social conditions; side-by-side are native New Yorkers and 'hicks,' civilians and servicemen, rich, poor, young and old, black and white, forgetting for a few moments perhaps that they are supposed to be 'the lonely crowd' so great in the indefinable magic—the electricity—of the big city which holds them all in its grip."

The four other boroughs are treated historically as well as descriptively and the visitor is advised to see them on foot. At the same time, mindful of other realities, the book says, "Walking alone by one's self at night is less safe in certain areas, especially women alone; reasonable precautions should be taken."

On the whole, the praise supported by facts might seem a refreshing change in reading to many New Yorkers who have heard their environs labeled from "Fun City" to "Fear City" and lots of other names in the last few years.

Ski trip on tap

On February 27-29, Grumman employees, retirees, and family members will have the opportunity to ski Mt. Snow, Brodie Mountain, and Bousquet's. Offered by GAA, this ski weekend package includes: round trip by bus, transportation to and from the slopes; accommodations at the Sheraton Inn in North Adams, Mass.; breakfast and dinner Saturday and Sunday; ski instruction; ski rental; a wine and cheese bus ride; entertainment nightly; and all tips and taxes.

The entire ski package costs each person: $69.75 (four per room); $74.75 (three per room); and $79.75 (double occupancy). For further information, call GAA on Ext. 2133 or 2269.

Conducting railroad survey

Do you still wince when you say "fill'er up" at the gas pump?...or have you read every bumper sticker that has been printed while you've crept along on the L.I.E.? Have you thought about becoming a member of the Long Island Rail Road commuter set?

The Employee Services department is conducting a survey to determine how many Grumman employees would like to have more rush-hour stops at the Grumman railroad station. If you are interested, fill out the form below, and return it to: Survey, ESO, Plant 2.

SURVEY

Name ..... Ext. .....

Perm. No. ..... Plant ..... Dept. .....

Starting time ..... Quitting time .....

Station nearest your home .....

Present mode of transportation .....

Return to: Survey
ESO
Plant 2

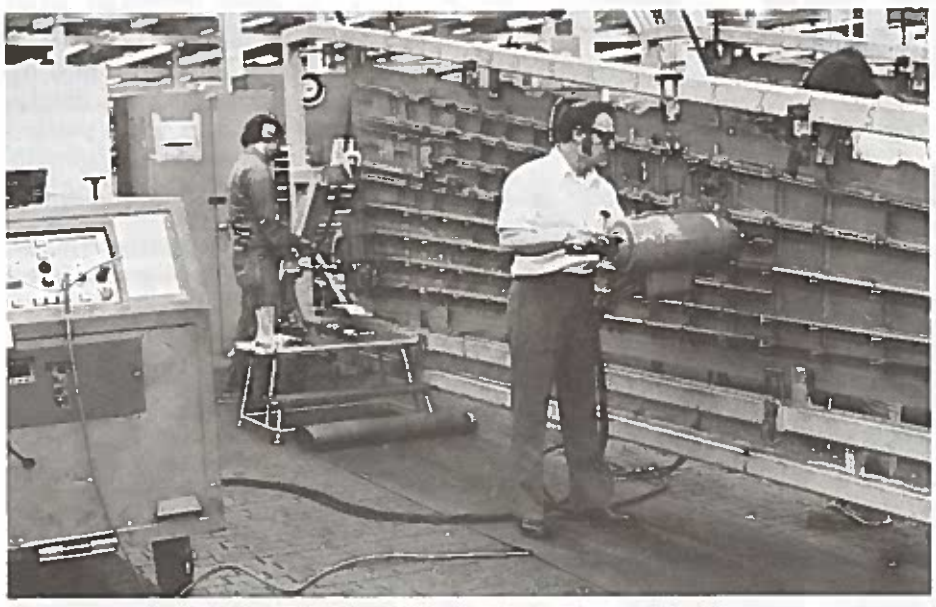
See stress wave riveter as cost-cutter, aid to improving riveting quality

Aircraft traveling at supersonic and near supersonic speeds are placed under tremendous pressures. If the smallest crack forms at a critical area near the base of a wing, for example, the complete airplane could be in great danger. Because of the continuous stress and vibrations experienced by an aircraft in flight, that tiny crack could propagate in time and cause the wing to tear away as easily as a child rips a paper model. Of course that rarely happens, but aircraft designers and manufacturers have to continually guard against just such a happening.

The Stress Wave Riveter (SWR), a remarkable invention by a Grumman research scientist, is proving to be an answer to one part of the problem; that of metal wear (which leads to cracks) that sometimes results at points where rivets and other fasteners are used. The revolutionary tool can replace heavy equipment now used on high strength metals and even lowers manufacturing and labor costs because it can utilize inexpensive hardware and employs fewer operators too. The SWR has been under development since 1969 and now the unique riveter "promises effective changes in all manufacturing methods throughout industry," according to its inventor, Basil Leftheris.

"Metal fatigue life" is the term used to describe the ability of a metal to withstand pressures for measured periods of time. The faster a metal wears out, the shorter the fatigue life. As aircraft designs demanded more and more engine power to provide greater and greater speeds, there was a need to develop lighter and stronger metals (such as titanium) that could hold up under the increased pressures. The composition of the metal itself is not the only concern—another critical factor is the manner in which sections of metal are joined together. If the rivets are not fitted perfectly in precision holes where these high strength skins are joined, for instance, the very act of driving in the rivets can begin a wearing process that could shorten fatigue life.

This is the area of work in which the SWR has performed particularly well and has proved to be a "forgiving shop tool"; that is, it can produce reliably riveted joints every time, compensating for minor variations in hole size preparation. In doing this, it improves metal fatigue life and permits planes to operate longer in the air, and more importantly, safer, too. Hole defects that come from imprecise drilling operations can be "blanketed" by an SWR, making it an excellent correction or repair instrument.



Coming of age. While Mike Carbone operates Stress Wave Riveter in Plant 3 and William Hardisky holds bucking bar, Rich Hunter works uninterrupted on another part of the F-14 titanium wing skin assembly. The vehicle (L) is a mobile capacitor bank, the SWR power source. (Photo by Harry Prodromides)

In addition, the SWR is providing an alternate riveting method by replacing the conventional precision type fasteners (which require more expensive hardware) with inexpensive rivets. It is also portable—it can be used to make repairs on aircraft outside as well as inside the plants. Besides being easy to operate, it uses a wide variety of rivet and pin sizes.

Usually, certain fabrication processes on a large section of an assembly requires that all other work stop on it while the section is transported to an immense, stationary hydraulic press. Then the section is set in place for the riveting operation, and must be reset for each following operation. All this is changed drastically using a SWR. The portable gun is attached to a capacitor bank source, also portable. Its small size, compared to the hydraulic presses, permits moving the SWR—rather than the assemblies—easily around a plant to wherever it's needed on the assembly line.

The smaller size of the SWR is made possible because it substitutes electrical energy for the sheer brute force of a hydraulic press or rivet gun. These electrical stress waves emitted by the SWR are transmitted through a rivet without impact, expanding it uniformly within the rivet hole and creating a rivet head in one millisecond. In removing the need for heavy pressure to force each rivet, the SWR allows the use of inexpensive regular rivets, which produce uniform, high-interference fits—even in non-precision holes—at a faster rate. It is easier to handle, too. Two workers are necessary to handle the SWR—one to shoot and one to hold the bucking bar on the part being fastened.

Augie Ripp, manager of Plant 3 where the SWR is used currently on F-14 wing assemblies says, "We now have a tool that is reliable. ... It can install inexpensive interference rivets that give better fuel sealing without using sealing 'gunk' (sealants) or 'O' rings."

By using the SWR, Ripp says the Plant 3 fabrication costs have been reduced. Perhaps that's because by using the SWR, one small precision fastener that costs $1.70 can be replaced by an ordinary fastener that costs only 9 cents. Leftheris figures that, "If only 108,000 of these inexpensive rivets were inserted in place of high-cost fasteners in one year by SWRs, the savings would come to $150,000—and many aircraft have tens of thousands of these rivets."

Awareness of the Stress Wave Riveter is still growing in the field. Bill Fehrs, director of Commercial and Special Products feels that more Grumman plants could probably benefit also from putting the SWRs to work. He says the Manufacturing Department is completing a study to verify SWRs' potential applications in areas of industry where it has not been used, and as the invention is patented, outside industries might find SWRs beneficial as well.

For information, Leftheris can be reached on Ext. 2218 and Fehrs on 7415.

calendar

Aikido Club: every Mon. & Wed., 5:15 p.m., Pl. 35 cafe; guests welcome. Bob Bauman, x84636.

Alcoholics Anonymous: every Mon., 5 p.m., Pl. 39, classroom 1; closed mtgs. Personnel Relations, x3521.

American Society for Metals: (joint mtg. with SAMPE) Tues., Feb. 10, complimentary cocktails 5:30 p.m., dinner 6:30 p.m., speaker 8 p.m., Kings Grant, Plainview; local chapter; guest speaker: Charles Bushnell, Princeton University—"Atomic Energy Powerplants;" guests welcome. Jerry Beaudoin, x3945.

Chess Club: every Tues., 5 p.m., Pl. 30 cafe; guests welcome. Pat Charovkine, x9387.

Coin Club (Calverton): every Fri., 1st lunch period, instrumentation conference room, Pl. 6; guests welcome. Jerry Kreussling, x517-6844.

Duplicate Bridge Club: every Thurs., 6 p.m., Pl. 30 cafe; open competition; guests welcome. Hugh Montague, x3863/Erick Stern, x1294.

Fencing Club: every Mon., 4:30-6:00 p.m., Pl. 30 cafe. George Kegney, x86048.

GAC Divers: Wed., Feb. 11, 5 p.m., Pl. 28 lobby; gen. mtg.; guests welcome. Cindy Schlicter, x6120.

Grumman Family Campers: Sun., Feb. 1, 5 p.m., Pl. 3 cafe; monthly mtg.; guests welcome. R. Mansbart, x86967.

Grumman Model Railroad Society: every Wed., 5:30-9:30 p.m., Model RR Bldg. (at Pl. 3 rr crossing); reg. mtg.; guests welcome. Ray Muntz, x87409.

Grumman Toastmasters Club: Wed., Feb. 11, 5 p.m., Pl. 25, conference room C; reg. mtg.; guests welcome. Kay O'Regan, x86596.

Karate Club: every Mon., Tues., & Thurs., 5:30 p.m., Pl. 35 cafe; building character thru physical exercise & self-defense; guests welcome. Hy Dreksler, x86812.

Old Friends Club (OFC): Mon., Feb. 2, 7 p.m., Viking Restaurant (dinner $6), Jericho Tpke.; monthly mtg.; guests welcome. Jerry D'Agostino, x3102.

Rod and Gun Club: every Mon., 4:30-9:30 p.m., NYS Armory, Riverhead; 1st & 3rd Mon., 8-10 p.m., Naval Reserve Training Center, Huntington; every Tues., 6-8 p.m., Colonial Firearms, Levittown; every Thurs., 6-10 p.m., Old Bethpage Club Range, W. Babylon; every Fri., 6-8:30 p.m., Marine HQ Range, Garden City; practice & matches; open to all Grummanites. Call GAA for information, x2133.

Ski Club: Wed., Feb. 4, 8 p.m., Plaza Restaurant, crnr. Newbridge Rd. & Old Cntry. Rd.; guests welcome. Art Garmendia, x9781.

Stamp Club: first 3 Wed. of each month, 5 p.m., Pl. 30 cafe. Steve Hoops, x3926.

Bargain prices

Have you checked the daily specials in the cafeterias lately? If the recent price hike has caused you to cut down on your lunch-hour repast, you should stop by at the cafeteria occasionally to see the specials being offered at bargain prices. They may surprise—and delight—you.

Personal

We would like to express our deepest thanks to the multitude of people in Grumman who expressed their understanding, affection, and kindness at the time of our recent bereavement. It's no wonder that the Grumman Corporation stands united. It's people are truly friends when our needs are the greatest. Their unfailing empathy will be remembered always. God bless you. The Carioli family.

Introduce Sunstream, a solar water-heater for homes

During the "great fuel shortage of '73" and the months that followed much attention was directed toward finding alternatives to fossil-fuel as energy sources.

Grumman Aerospace began its research-and-development efforts in this area in 1971 by forming the Energy Systems Group. Since then, the department devised several new approaches in the field of energy conservation and new energy sources, such as conducting energy consumption analyses for local school districts and recommending energy conservation methods to curtail fuel usage; and studies in collecting wind energy with the "Sailwing." "We are now entering the commercial market with our Sunstream solar domestic hot-water system for homes," says Ron Peterson, director of Energy Programs.

This system, which is designed for an average household of four and can operate all-year round in northern climes, will be produced and marketed by Sunstream, Inc.—formed in October 1975 as a division of Grumman Houston Corporation.

The "heart" of the Sunstream system is the solar collector panel that absorbs the sun's energy from a location on the roof of the home, on the ground, or anywhere else that is not shaded by trees or buildings. Here's how the system works: Sunstream anti-freeze is pumped through a closed loop, travels through the collector panel, absorbs solar heat, and transfers it to a storage tank through a heat-exchanger.

The Sunstream system receives cold water from the main line, heats it, and stores it in an 80-gallon tank supplied in the Sunstream kit. When hot water is needed, the water flows from the present or existing system and is immediately replaced by water flowing into it from the solar-system storage tank. The solar system acts as a pre-heater to the house's present system, says Peterson. In case of extra-ordinary hot water usage or periods of sunless weather, a house's present heating system (whether gas, electric, or oil) is used to back up the solar system.

Since most existing systems are thermostatically controlled, the existing heat source (oil, gas, or electric) will go on only if the replacement water from the Sunstream storage tank is not hot enough. "Even, then, the existing system heat-source will remain on for a much shorter time," comments Peterson. "The solar and existing systems combine to maximize availability of hot water and minimize energy consumption from the existing source."

An investment

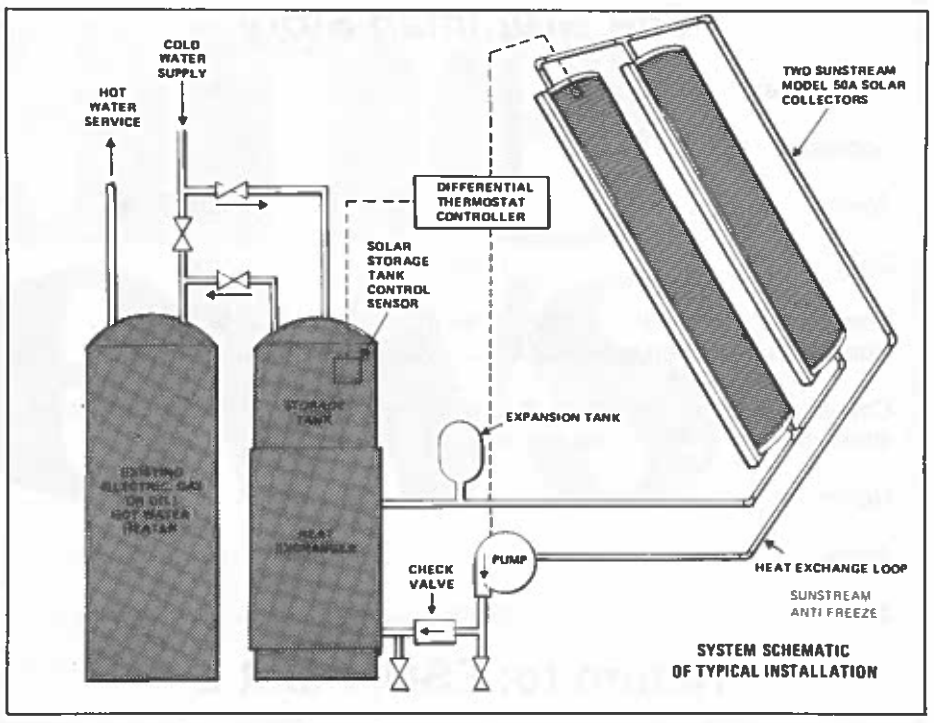
A common inquiry about the Sunstream system is: "Will it make hot water cheaper?" According to Art Barry, Sunstream's marketing manager, the Grumman solar system costs practically nothing to operate—so the purchase price and installation is the major expense. "Your present domestic hot-water heater has a continuing monthly operating cost which could represent up to one third of your heating bill," he says. "The 'payback' period, of course, varies according to how much hot water your family uses, the cost of fuel, etc. But, I tend to look at the Sunstream as more of an investment—just as people invest in thermopane windows and additional insulation for their homes."

The new Grumman Houston division is operating out of Plant 11A on Ludy Street in Hicksville. Already over 250 Sunstream systems have been packaged for shipment to dealers in the northeastern section of the country, says Hank Vroom, operations manager and also originator of the Sunstream Model 50A.

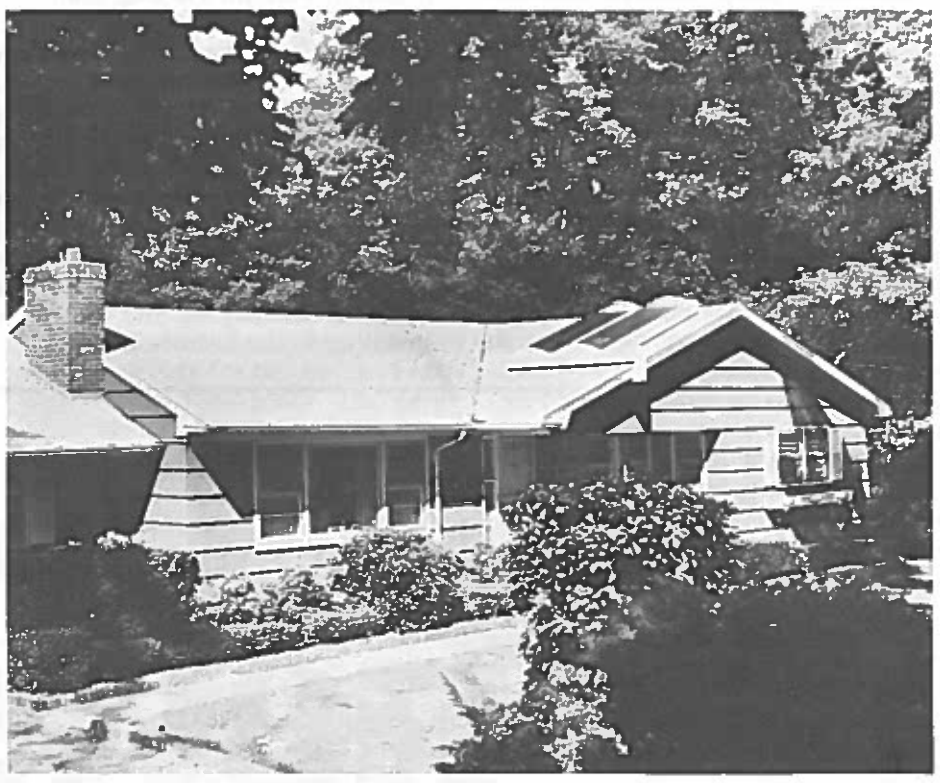
The Grumman Sunstream Model 50A system comes in kit form ready for assembly and installation by the homeowner or by a plumbing contractor. The kit, which has a suggested retail price of $995, contains: two flat-plate solar collectors, each measuring 3 feet 4 inches x 9 feet 2 inches, weighing about 70 pounds each; an 80-gallon, glass-lined, steel water-storage tank with integral wrap-around heat exchanger; a circulating pump; an expansion tank; pump control; Sunstream anti-freeze; and some special fittings for use in installation.

According to Barry, Grumman has begun marketing its new solar product throughout the northeast. As more dealerships are contracted, the Sunstream will become available across the nation.

If you wish additional information on the Sunstream solar domestic hot-water system, fill out the form on this page and mail it to: Sunstream Marketing, Plant 25. In the next issue of *Plane News*, a listing of the dealers will be published.



Sunstream system schematic. Sunstream anti-freeze is pumped through a closed loop, travels through the collector panels, absorbs solar heat, and transfers it to a storage tank through a heat-exchanger. A delivery pipe from the Sunstream system is attached to existing domestic hot water systems.



Roof-top. From the ground, the Sunstream solar collectors on this house cannot be seen. Solar collector panels can be placed on the roof, ground, or anywhere else that is not shaded. (Photo by Fred Annette)

Sunstream

Name.....Ext. .....

Dept .....Plant .....

Home address.....

Home telephone .....Type of home .....

Type of domestic hot water system.....

Type of home heating system .....No. occupants .....

Return to: Sunstream Marketing
Plant 25

Order Form

The Grumman Story

Your name: .....

Address: .....

Town: .....State .....Zip Code.....

Dept.. .....Plant .....Ext.....

Enclosed is my check or money order for ____ book(s) at $5.50 ea.
Number to be picked up at ESO ____ Number to be mailed: ____

Copies are to be mailed to the following person(s): (Attach additional sheet of paper if more than one is being mailed.)

Name: .....

Address: .....

Town: .....State .....Zip Code.....

Return to: ESO, Plant 2

Offering special discount on 'The Grumman Story'

Here's some good news for those who during the busy holiday season never found time to order their copy of the soon-to-be-released book, *The Grumman Story*. Authored by Richard Thruelsen, who for many years was senior editor of *The Saturday Evening Post*, this 400-page book is scheduled to roll off the presses in March. For a limited time only, Grumman employees and retirees are still able to order *The Grumman Story* through the company for $5.50 a copy. At your local bookstores, this Grumman saga will sell for $14.95.

Stocked with over 200 illustrations, it is a written tribute to the men and women who, since the company opened its doors for business back in January 1930, have combined their skills and knowledge to build Grumman into one of the leaders in the aerospace industry. In addition to supplying the "behind-the-scenes" action involving such Grumman accomplishments as the development of the sto-wing and the successful LM program, there is also an appendage that features photos and statistical data on all the Grumman products.

When ordering your copy of *The Grumman Story*, you must indicate whether or not you wish to pick up your book at the Employee Service Office (ESO) or if you wish to have it sent to a friend via U.S. Mail. The book is available in March. The order form below must be accompanied by a check or money order—no cash, please—made out to Grumman Employee Service Office for the exact amount.

You will receive a receipt that you must present when you pick-up your book(s) at your Employee Service Office. Books to be mailed will be sent directly to the person(s) specified in the form below.

Caution users of data phones

Special telephones for transmitting data directly to Grumman Data Systems computers have been installed throughout Grumman Aerospace plants for several years. Recently, some GAC employees began using the phones for personal calls, resulting in soaring telephone bills for GDS which operates them in conjunction with the computers. Unlike the Grumman exchange (575) (phones with automatic records of every call), the restricted ones have only the telephone company records of long distance and toll calls. Still, it was possible to investigate the calls and trace the unauthorized users.

The data phones carry Hicksville and other exchange numbers because of a requirement for noise-free operation. They are not part of the Grumman 575 phone system or the WATS service, and are billed to Grumman Data Systems in the way ordinary home phones are, on a monthly basis.

Decals on the receivers spell out the only use of the special phones—**for making data transmissions to and from the 360/67 Time Sharing computer and never for voice communication of any kind.** That's clear to anyone who sees the decal. In cases where decals are removed, the phones can still be identified by the fact that they have numbers other than 575 as their first three digits.

Particular attention to the correct use of restricted data phones is asked of all employees by GDS.

Begin registration for scuba course

The Grumman Scuba Divers' Club recently announced that registration is now open for its early spring scuba diving course. Tentatively scheduled to start in mid-February, the 36-hour course which consists of pool and theory classes will be conducted one night a week.

At the completion of the course, PADI and YMCA certificates will be issued to those who have met all the requirements. The last day of registration will be on Wednesday, February 11 at the club's monthly meeting. Enrollment is limited.

Additional information can be obtained by contacting the following club members: at Bethpage, Steve Failer, Ext. 86338, and Doug Sherrard, Ext. 87573; and at Calverton, Carl Acker, Ext. 7476, and Al Hiltunen, Ext. 7168.

Snow-closing information

In the event of severe snowstorms or other emergencies this winter, information concerning plant closings will be available by dialing either of two Grumman telephone numbers or through spot announcements on local radio stations.

You may call either **LR5-5111** in Bethpage or **PA7-1504** in Calverton, beginning at 5 a.m.

The following radio stations will be carrying plant closing information:

WNBC	**660**	**WTHE**	**1520**
WHN	**1050**	**WGBB**	**1240**
WBAB	**1440**	**WMCA**	**570**
WOR	**710**	**WABC**	**770**

(Other Long Island stations have fluctuating broadcast schedules and are therefore not listed.)

To facilitate snow removal in parking areas, the Facilities Maintenance Department urges that automobiles parked beyond normal daytime working hours be left unlocked so that they can be moved if necessary. Valuables should be removed or locked in trunks.

GRUMMAN plane news

ADDRESS CORRECTION REQUESTED

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